RESEARCH PRIORITIZATION PROCESS

Process Overview

The process of prioritizing research needs for the Utah Department of Transportation (UDOT) is based around a collaborative, annual workshop, organized by the UDOT Research Division. This workshop has come to be known as "UTRAC", the acronym for the Utah Transportation Research Advisory Council, a group of UDOT leaders who previously oversaw the prioritization process. In the current prioritization process, UDOT staff, FHWA staff, key consultants, research partners, contractors, and people from associated agencies gather to evaluate and prioritize UDOT's research needs. These needs are defined by Problem Statements that were submitted by many parties prior to the workshop. Available funding is applied to the highest priority Problem Statements, as determined during the workshop through a voting process.

The annual UTRAC Workshop was initiated in 1993, and has been a very successful process. The process has been modified several times, and underwent some significant revisions in 2005.

The key steps employed in the 2006 research prioritization process at UDOT are shown below. Although the UTRAC Workshop played a central role in the process (step 6), a number of steps were needed before and after the workshop to make the process complete. The steps were:

1. Identified key leaders in the Department to lead the Problem Statement generation process in each of nine discipline areas. Those areas were:

    a. Construction
    b. Maintenance
    c. Materials & Pavements
    d. Environmental
    e. Planning & Asset Management
    f. Traffic Management & Safety
    g. Geotechnical
    h. Structural
    i. Hydraulics

2. Assigned a person from the Research Division staff to work with each discipline group.

3. Provided background information to the group leaders on the prioritization process and their role within it.

4. Solicited Problem Statements from each of the discipline groups (and other stakeholders), making the leader for that group responsible to lead the Problem Statement development

process. The Problem Statement submission deadline was set about one month ahead of the workshop. Emphasized the need to identify a key UDOT Champion for each Problem Statement, and a plan for implementation. Problem Statements were accepted from any entity, and did not need to come through the discipline group or its leader. Tools provided to each group leader included:

a. List of Problem Statements from the past year.
b. Problem Statement form (revised from previous years).
c. Suggestions about coordinating with contractors, consultants and key researchers during this early stage in the process to ascertain their needs, interests and resources.

5. Research Division staff contact for each discipline group reviewed the submitted Problem Statements. Their review included a literature search to determine if similar work had been performed in Utah or elsewhere, or if significant knowledge on the topic could be provided to the discussion. Project scopes were evaluated to insure that well-defined work tasks and clear deliverables were envisioned. Implementation plans were also required in the scope statements. As needed, revised Problem Statements were proposed to the group leaders.

6. Convened a one-day workshop to review the Problem Statements and prioritize them. The workshop included 118 people from UDOT, FHWA, key consulting and construction firms, the three research universities in Utah, other state agencies, and the public. Elements of the workshop included:

a. Keynote address from Mr. John Njord, P.E., the UDOT Executive Director, discussing innovations used by UDOT in recent years, and encouraging further innovation.
b. Presentation of the status of research projects initiated during the 2005 UTRAC Workshop.
c. Divided into nine working groups to evaluate the Problem Statements, discuss scopes and deliverables, and establish priorities. Background information was presented by the authors of the Statements, and by the Research Division contact. A total of 64 Problem Statements were evaluated by the groups. The number of submitted Problem Statements per group ranged from three to twelve.
d. Prioritized the statements through a two-step voting process using weighted ballots that minimized the ability of any one subgroup to dominate the process (UDOT participants dominated the voting scheme, irrespective of the number of people present).
e. During breaks throughout the day, groups were able to interact to share ideas, gather supporting information, and provide input on cross-discipline problems.
f. Each discipline group concluded the workshop by submitting a list of their top three to six projects, in order of priority.

7. Research Program Manager assembled the prioritized Problem Statements from each discipline group into a master list of research priorities. This list included the 34 Problem Statements.

8. Sorted the assembled Problem Statement list by order of priority, so that the number one priority of each discipline group was shown first, followed by the number two priorities, and so on.

9. Applied the available research funding to the priority-order Problem Statement list, starting at the top of the list and working down, yielding a list of about 19 projects which could be funded in fiscal year 2007.

10. Presented the priority list and funding scenario to the Research Division Director for input and approval.

11. Assigned Research Division staff as Project Managers for each of the projects, and discussed possible Principal Investigators for each.

12. Submitted the final funding list for approval by the Department and FHWA, as part of the annual Research Program funding document.

13. Initiated the research projects.

2006 UTRAC Workshop Team

Each year, it takes a large group of people to organize and execute the UTRAC Workshop. The following people were involved in 2006:

Director of Research and Bridge Operations: Rukhsana (Shana) Lindsey

Chair of UTRAC Event: Blaine D. Leonard

Workshop Logistics Team: Esther Olsen, Elaine Chatfield, Rae Ann Jensen, Raeleen Maxfield

FHWA Liaison: Paul Mooney

Discipline Group Leaders and Research Contacts:

      Group 1: Construction
             Group Leader: Darrell Giannonatti
             Research Advisor: Michelle Page

      Group 2: Maintenance
             Group Leaders: Rich Clarke / Kevin Griffin
             Research Advisor: Barry Sharp

Group 3: Materials & Pavements
        Group Leader: Tim Biel
        Research Advisor: Doug Anderson

Group 4: Environmental
        Group Leader: Jerry Chaney
        Research Advisor: Doug Anderson

Group 5: Planning & Asset Management
        Group Leader: Kim Schvaneveldt
        Research Advisor: Abdul Wakil

Group 6: Traffic Management & Safety
        Group Leader: Richard Manser
        Research Advisor: Ken Berg

Group 7: Geotechnical
        Group Leader: Darin Sjoblom
        Research Advisor: Blaine Leonard

Group 8: Structures
        Group Leader: Boyd Wheeler
        Research Advisor: Daniel Hsiao

Group 9: Hydraulics
        Group Leader: Michael Fazio
        Research Advisor: Debbie Heim

2006 UTRAC Workshop Basic Agenda

The UTRAC Workshop was held on March 21, 2006, at the Salt Lake Community College Miller Campus, in Sandy Utah. The workshop was attended by 118 people from various divisions within UDOT, the Federal Highway Administration (FHWA), other government agencies, the three research Universities in Utah, consultants, contractors, and others. The workshop consisted of two main sessions and three breakout sessions. During the breakout sessions, discipline groups discussed, modified, and prioritized Problem Statements. The complete Workshop Agenda is included in the Appendix of this report. The basic outline of the sessions was as follows:

Introductory Plenary Session:
      Welcome – Rukhsana Lindsey, Director of Research
      Keynote Address – John Njord, UDOT Executive Director
      Research Program Status – Blaine Leonard, Research Project Manager
      Workshop Instructions - Blaine Leonard, Research Project Manager

First Breakout Session:
      Problem presentations, discussion, and first prioritization voting

Lunch Session:
       Presentation of Trailblazer Award – Rukhsana Lindsey, Dir. of Research
                Award of Door Prizes – Barry Sharp, New Products Coordinator

Second Breakout Session:
       Problem Statement Refining: Objectives, Tasks, Benefits, Implementation

Third Breakout Session:
       Problem Statement refinement & discussion:
       Deliverables, Tasks & Budget
       Final Prioritization Voting
       Completion of Workshop Feedback and Evaluation

Each workshop participant was given a packet of information, which included an agenda, a list of breakout groups and room assignments, a list of all the Problem Statements being considered by each group, and a copy of each of the Problem Statements being considered by the group the participant is assigned to. The Group Leader and Research Advisor assigned to each group were each given a binder containing a copy of every Problem Statement being considered by all the groups, ballots for voting in their group, and a spreadsheet (on disk) to be used to tally the ballots. They were also given an instruction sheet on how to manage the group and the voting process.